

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	25165474	@ad<"20031126"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L2	363	(set setting assign\$4) with (identifier ID field indicat\$3) same replicat\$3 and creat\$3 with (identifier field tag)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L3	259	L1 and L2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L4	520	(set setting assign\$4) with (identifier field indicat\$3) same replicat\$3 and creat\$3 same (identifier field tag)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L5	32	L1 and L4 and "711".cls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L6	771	711/152.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L7	49	L1 and L6 and replicat\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27

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L8	16	(set setting assign\$4) with (identifier ID field state tag) same replicat\$3 and creat\$3 with (identifier ID field tag state) and L1 and replicat\$3 with ready	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L9	7	L3 and replicat\$3 with ready	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L10	178	(set setting assign\$4) with (identifier field indicat\$3) with replicat\$3 and creat\$3 with (identifier field tag)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L11	1	L1 and L6 and replicat\$3.ab.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L12	128	L10 and L1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L13	363	(set setting assign\$4) with (identifier ID field indicat\$3) same replicat\$3 and creat\$3 with (identifier field tag)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L14	25165474	@ad<"20031126"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27

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L15	259	L14 and L13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L16	771	711/152.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L17	49	L14 and L16 and replicat\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L18	520	(set setting assign\$4) with (identifier field indicat\$3) same replicat\$3 and creat\$3 same (identifier field tag)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:16
L19	1	L14 and L16 and replicat\$3.ab.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L20	178	(set setting assign\$4) with (identifier field indicat\$3) with replicat\$3 and creat\$3 with (identifier field tag)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L21	4	(set setting assign\$4 state) with (identifier ID field state tag) with replicat\$3 with ready and creat\$3 same (identifier ID field state tag) and L14	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27

## EAST Search History

L22	32	L14 and L18 and "711".clas.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L23	16	(set setting assign\$4) with (identifier ID field state tag) same replicat\$3 and creat\$3 with (identifier ID field tag state) and L14 and replicat\$3 with ready	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L24	7	L15 and replicat\$3 with ready	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L25	128	L20 and L14	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L26	3	(set setting assign\$4 state chang\$3) with (identifier ID field state tag) with replicat\$3 with ready and creat\$3 with (identifier ID field state tag) and L14	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 15:27
L27	1337	(set setting assign\$4 state chang\$3) with (identifier ID field state tag) with replicat\$3 and creat\$3 with (identifier ID field state tag)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 18:52
L28	1198	711/147.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 16:48

## EAST Search History

L29	2503	711/154.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 16:48
L30	1009	711/156.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 17:17
L31	698	710/200.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 17:26
L32	1487	711/163.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 17:39
L33	52	(set setting assign\$4 state chang\$3) with (identifier ID field state tag) with replicat\$3 same database same object and creat\$3 with (identifier ID field state tag) and 1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:07
L34	2321	709/201.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:04
L35	1251	709/213.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:04

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L36	5517	707/1.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:07
L37	1703	707/9.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:08
L38	1565	707/103R.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:08
L39	2774	707/200.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:08
L40	1498	707/201.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:15
L41	109	(28 29 30 31 32 34 35 36 37 38 39 40) and 1 and (3 7 12 33)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:19
L42	127	(16 28 29 30 31 32 34 35 36 37 38 39 40) and 1 and (3 7 12 33)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/01/18 19:26
L43	775	conrad.in.	US-PGPUB	OR	ON	2007/01/18 19:31
L44	8	43 and state.clm. and identifier.clm.	US-PGPUB	OR	ON	2007/01/18 19:41

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L45	1	43 and state.clm. and identifier.clm. and "shared lock".clm.	US-PGPUB	OR	ON	2007/01/18 19:41
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### 1 [Middleware for dependable network services in partitionable distributed systems](#)



Alberto Montresor, Renzo Davoli, Özalp Babaoğlu

 January 2001 **ACM SIGOPS Operating Systems Review**, Volume 35 Issue 1

Publisher: ACM Press

 Full text available: [pdf\(1.38 MB\)](#)

 Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

We describe the design and implementation of *Jgroup*: a middleware system that integrates group technology with distributed objects and is based on Java RMI. Jgroup supports a programming paradigm called *object groups* and enables development of dependable network services based on replication. Among the novel features of Jgroup is a uniform object-oriented interface for programming both services and their clients. The fact that Jgroup exposes network effects, including partitions, t ...

### 2 [Transparent sharing of Java applets: a replicated approach](#)



James Begole, Craig A. Struble, Clifford A. Shaffer, Randall B. Smith

 October 1997 **Proceedings of the 10th annual ACM symposium on User interface software and technology UIST '97**

Publisher: ACM Press

 Full text available: [pdf\(1.43 MB\)](#)

 Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**Keywords:** Java, collaboration transparency, computer-supported cooperative work, groupware

### 3 [BASE: using abstraction to improve fault tolerance](#)



Rodrigo Rodrigues, Miguel Castro, Barbara Liskov

 October 2001 **ACM SIGOPS Operating Systems Review**, **Proceedings of the eighteenth ACM symposium on Operating systems principles SOSP '01**, Volume 35 Issue 5

Publisher: ACM Press

 Full text available: [pdf\(1.47 MB\)](#)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Software errors are a major cause of outages and they are increasingly exploited in malicious attacks. Byzantine fault tolerance allows replicated systems to mask some software errors but it is expensive to deploy. This paper describes a replication technique, BASE, which uses abstraction to reduce the cost of Byzantine fault tolerance and to

improve its ability to mask software errors. BASE reduces cost because it enables reuse of off-the-shelf service implementations. It improves availability ...

4 A distributed algorithm for graphic objects replication in real-time group editors



David Chen, Chengzheng Sun

November 1999 **Proceedings of the international ACM SIGGROUP conference on Supporting group work GROUP '99**

**Publisher:** ACM Press

Full text available: pdf(1.28 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Real-time collaborative editing systems are groupware systems that allow multiple users to edit the same document at the same time from multiple sites. A specific type of collaborative editing system is the object-based collaborative graphics editing system. One of the major challenge in building such systems is to solve the concurrency control problems. This paper addresses the concurrency control problem of how to preserve the intentions of concurrently generated operations whose ...

**Keywords:** collaborative editing, concurrency control, consistency maintenance, distributed computing, graphics editing

5 BASE: Using abstraction to improve fault tolerance



Miguel Castro, Rodrigo Rodrigues, Barbara Liskov

August 2003 **ACM Transactions on Computer Systems (TOCS)**, Volume 21 Issue 3

**Publisher:** ACM Press

Full text available: pdf(438.18 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Software errors are a major cause of outages and they are increasingly exploited in malicious attacks. Byzantine fault tolerance allows replicated systems to mask some software errors but it is expensive to deploy. This paper describes a replication technique, BASE, which uses abstraction to reduce the cost of Byzantine fault tolerance and to improve its ability to mask software errors. BASE reduces cost because it enables reuse of off-the-shelf service implementations. It improves availability ...

**Keywords:** Byzantine fault tolerance, N-version programming, asynchronous systems, proactive recovery, state machine replication

6 A Peer-to-Peer Replica Location Service Based on a Distributed Hash Table



Min Cai, Ann Chervenak, Martin Frank

November 2004 **Proceedings of the 2004 ACM/IEEE conference on Supercomputing SC '04**


**Publisher:** IEEE Computer Society

Full text available: pdf(343.25 KB) Additional Information: [full citation](#), [abstract](#)

A Replica Location Service (RLS) allows registration and discovery of data replicas. In earlier work, we proposed an RLS framework and described the performance and scalability of an RLS implementation in Globus Toolkit Version 3.0. In this paper, we present a Peer-to-Peer Replica Location Service (P-RLS) with properties of self-organization, fault-tolerance and improved scalability. P-RLS uses the Chord algorithm to self-organize PRLS servers and exploits the Chord overlay network to replicate ...

**Keywords:** Algorithms, Experimentation, Grid, Peer-to-Peer, Replication

## 7 Serverless network file systems

 T. E. Anderson, M. D. Dahlin, J. M. Neefe, D. A. Patterson, D. S. Roselli, R. Y. Wang  
December 1995 **ACM SIGOPS Operating Systems Review , Proceedings of the fifteenth ACM symposium on Operating systems principles SOSP '95**, Volume 29 Issue 5


**Publisher:** ACM Press

Full text available:  [pdf\(2.48 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

## 8 Implementing fault-tolerant services using the state machine approach: a tutorial

 Fred B. Schneider  
December 1990 **ACM Computing Surveys (CSUR)**, Volume 22 Issue 4

**Publisher:** ACM Press


Full text available:  [pdf\(2.10 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

The state machine approach is a general method for implementing fault-tolerant services in distributed systems. This paper reviews the approach and describes protocols for two different failure models—Byzantine and fail stop. Systems reconfiguration techniques for removing faulty components and integrating repaired components are also discussed.


## 9 Dealing with server corruption in weakly consistent replicated data systems

Mike J. Spreitzer, Marvin M. Theimer, Karin Petersen, Alan J. Demers, Douglas B. Terry  
October 1999 **Wireless Networks**, Volume 5 Issue 5


**Publisher:** Kluwer Academic Publishers

Full text available:  [pdf\(180.10 KB\)](#) Additional Information: [full citation](#), [references](#), [index terms](#)

## 10 The state of the art in locally distributed Web-server systems

 Valeria Cardellini, Emiliano Casalicchio, Michele Colajanni, Philip S. Yu  
June 2002 **ACM Computing Surveys (CSUR)**, Volume 34 Issue 2

**Publisher:** ACM Press

Full text available:  [pdf\(1.41 MB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


The overall increase in traffic on the World Wide Web is augmenting user-perceived response times from popular Web sites, especially in conjunction with special events. System platforms that do not replicate information content cannot provide the needed scalability to handle large traffic volumes and to match rapid and dramatic changes in the number of clients. The need to improve the performance of Web-based services has produced a variety of novel content delivery architectures. This article w ...

**Keywords:** Client/server, World Wide Web, cluster-based architectures, dispatching algorithms, distributed systems, load balancing, routing mechanisms

## 11 Distributed self-stabilizing placement of replicated resources in emerging networks

Bong-Jun Ko, Dan Rubenstein  
June 2005 **IEEE/ACM Transactions on Networking (TON)**, Volume 13 Issue 3

**Publisher:** IEEE Press

Full text available:  [pdf\(470.74 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)

Emerging large scale distributed networking systems, such as P2P file sharing systems, sensor networks, and ad hoc wireless networks, require replication of content,

functionality, or configuration to enact or optimize communication tasks. The placement of these replicated resources can significantly impact performance. We present a novel self-stabilizing, fully distributed, asynchronous, scalable protocol that can be used to place replicated resources such that each node is "close" to some copy ...

**Keywords:** convergence, graph coloring, replica placement

## 12 Providing high availability using lazy replication



Rivka Ladin, Barbara Liskov, Liuba Shrira, Sanjay Ghemawat

November 1992 **ACM Transactions on Computer Systems (TOCS)**, Volume 10 Issue 4

**Publisher:** ACM Press

Full text available: pdf(2.46 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

To provide high availability for services such as mail or bulletin boards, data must be replicated. One way to guarantee consistency of replicated data is to force service operations to occur in the same order at all sites, but this approach is expensive. For some applications a weaker causal operation order can preserve consistency while providing better performance. This paper describes a new way of implementing causal operations. Our technique also supports two other kinds of operations: ...

**Keywords:** client/server architecture, fault tolerance, group communication, high availability, operation ordering, replication, scalability, semantics of application

## 13 An authorization model for temporal and derived data: securing information portals



Vijayalakshmi Atluri, Avigdor Gal

February 2002 **ACM Transactions on Information and System Security (TISSEC)**, Volume 5 Issue 1

**Publisher:** ACM Press

Full text available: pdf(406.85 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The term *information portals* refers to Web sites that serve as main providers of focused information, gathered from distributed data sources. Gathering and disseminating information through information portals introduce new security challenges. In particular, the authorization specifications, as well as the granting process, are temporal by nature. Also, more often than not, the information provided by the portal is in fact derived from more than one backend data source. Therefore, any au ...

**Keywords:** Access control, authorization administration, derived data, temporal data

## 14 Distributed, object-based programming systems



Roger S. Chin, Samuel T. Chanson

March 1991 **ACM Computing Surveys (CSUR)**, Volume 23 Issue 1

**Publisher:** ACM Press

Full text available: pdf(2.97 MB)


Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

The development of distributed operating systems and object-based programming languages makes possible an environment in which programs consisting of a set of interacting modules, or objects, may execute concurrently on a collection of loosely coupled processors. An object-based programming language encourages a methodology for designing and creating a program as a set of autonomous components, whereas a distributed operating system permits a collection of workstations or personal

computers ...

**Keywords:** capability scheme, distributed operating systems, error recovery, method invocation, nested transaction, object model, object reliability, object-based programming languages, processor allocation, resource management, synchronization, transaction


15 Flexible update propagation for weakly consistent replication

 Karin Petersen, Mike J. Spreitzer, Douglas B. Terry, Marvin M. Theimer, Alan J. Demers  
October 1997 **ACM SIGOPS Operating Systems Review , Proceedings of the sixteenth ACM symposium on Operating systems principles SOSP '97**, Volume 31 Issue 5

**Publisher:** ACM Press

Full text available:  [pdf\(2.16 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

16 A replicated, distributed file system

 Walter F. Tichy, Zuwang Ruan  
September 1986 **Proceedings of the 2nd workshop on Making distributed systems work EW 2**

**Publisher:** ACM Press

Full text available:  [pdf\(298.93 KB\)](#) Additional Information: [full citation](#), [references](#)

17 Draft Report on the Algorithmic Language ALGOL 68

A. Van Wijngaarden, B. J. Mailloux, J. Peck, C. H. A. Koster  
March 1968 **ALGOL Bulletin**, Issue Sup 26


**Publisher:** Computer History Museum

Full text available:  [pdf\(6.16 MB\)](#) Additional Information: [full citation](#), [citations](#), [index terms](#)

18 Design and evaluation of a conit-based continuous consistency model for replicated services

 Haifeng Yu, Amin Vahdat  
August 2002 **ACM Transactions on Computer Systems (TOCS)**, Volume 20 Issue 3

**Publisher:** ACM Press

Full text available:  [pdf\(406.85 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The tradeoffs between consistency, performance, and availability are well understood. Traditionally, however, designers of replicated systems have been forced to choose from either strong consistency guarantees or none at all. This paper explores the semantic space between traditional strong and optimistic consistency models for replicated services. We argue that an important class of applications can tolerate relaxed consistency, but benefit from bounding the maximum rate of inconsistent access ...

**Keywords:** Conit, consistency model, continuous consistency, network services, relaxed consistency, replication

19 Practical byzantine fault tolerance and proactive recovery

 Miguel Castro, Barbara Liskov  
November 2002 **ACM Transactions on Computer Systems (TOCS)**, Volume 20 Issue 4

**Publisher:** ACM Press

Full text available:  pdf(1.63 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Our growing reliance on online services accessible on the Internet demands highly available systems that provide correct service without interruptions. Software bugs, operator mistakes, and malicious attacks are a major cause of service interruptions and they can cause arbitrary behavior, that is, Byzantine faults. This article describes a new replication algorithm, BFT, that can be used to build highly available systems that tolerate Byzantine faults. BFT can be used in practice to implement re ...

**Keywords:** Byzantine fault tolerance, asynchronous systems, proactive recovery, state machine replication, state transfer

20 [DistView: support for building efficient collaborative applications using replicated objects](#)



Atul Prakash, Hyong Sop Shim

October 1994 **Proceedings of the 1994 ACM conference on Computer supported cooperative work CSCW '94**

**Publisher:** ACM Press

Full text available:  pdf(1.61 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The ability to share synchronized views of interactions with an application is critical to supporting synchronous collaboration. This paper suggests a simple synchronous collaboration paradigm in which the sharing of the views of user/application interactions occurs at the window level within a multi-user, multi-window application. The paradigm is incorporated in a toolkit, DistView, that allows some of the application windows to be shared at a fine-level of granularity, while still allowin ...

**Keywords:** active objects, collaboration technology, concurrency control, distributed objects, groupware, multiuser interfaces, replicated objects, shared windows

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